

---

## **2.0 PURPOSE AND NEED**

### **2.1 INTRODUCTION**

This section defines the purpose and need for the study and identifies a number of related project benefits. The purpose and need is a method for outlining both the reasons for proposing a project and the underlying need for the project. The purpose and need for this project – as described in the DEIS dated March 2006 – was not changed. However, as a result of the coordination process, various elements of the purpose and need were expanded and reorganized for clarification in the August 2010 SDEIS.

### **2.2 PROPOSED ACTION**

#### **2.2.1 Proposed Action**

The Authority proposes to construct and operate an approximate 800-acre intermodal facilities complex in the ARV. As stated in Section 1.3, the proposed transportation complex would include three modes of transportation: water (commercial navigation via a slackwater harbor connected to the Arkansas River), highway (via connection to the interstate highway system), and rail (via connection to the national railroad grid).

The geographic limits of the proposed action consist of the six-county ARV region, which extends along the Arkansas River from Highway 109, located just west of Clarksville, Arkansas, to Highway 9 near Morrilton, Arkansas. The cost estimate range for the proposed intermodal facilities alternatives is between \$10 and \$30 million.

#### **2.2.2 Proposed Action Components**

The Authority was established by both the City of Russellville and Pope County. Other locations within the ARV have been, and will continue to be considered for the placement of the project, with the ultimate goal of finding the best location for the proposed facilities in the ARV.

The following components were identified by the Authority<sup>1</sup> as desired for the proposed general purpose intermodal facilities of approximately 800 acres:

- Transportation facilities, including infrastructure such as:
  - Railroad team track;
  - Railroad access and marshalling yard;
  - Railroad tramp (metal separator) loading site;
  - Truck staging areas;
  - Vehicular access and internal roadways;

---

<sup>1</sup> Planning and Research Division, Arkansas State Highway and Transportation Department, *Intermodal Transportation Needs-Economic Development Study: Potential Benefits and of Regional Transportation Center and Manufacturing/Freight Consolidation/Distribution Complex*, August 1998; and Dr. Gregory Hamilton, et al, *Economic Feasibility and Debt Capacity of the Russellville River Port Project*, September 2002.

- 
- Parking/Holding areas;
    - Towing operator facilities;
    - Barge company facilities;
    - Stevedore facilities;
    - Fleet operators facilities; and
    - Waterway service firms facilities.
  - Material handling equipment such as:
    - Cranes;
    - Conveyors;
    - Forklifts;
    - Loaders; and
    - Heavy lift equipment.
  - Support facilities including:
    - Administrative offices (for the marine terminal);
    - Docks;
    - Wharves;
    - Truck scales; and
    - Fuel depot.
  - Industrial/Distribution facilities such as:
    - Offices;
    - Warehouses (for traditional and specialized storage including refrigerated-frozen products, as well as other industrial uses with specialized truck-rail docks);
    - Vehicular parking;
    - Mechanical shops;
    - Smaller general storage units;
    - Open storage areas (truck trailers and containers);
    - Dry and liquid bulk storage tanks;
    - Transloading facilities;
    - Trailer-on-flat-car service;
    - Container-on-flat-car service;
    - Transit sheds;
    - Side loader; and
    - Grain elevators.
  - Utility infrastructure including:
    - Gas lines;
    - Pipelines;
    - Electrical power (substation and distribution system);
    - Sewer;
    - Cable;
    - Telephone lines; and
    - Water.

---

## **2.3 PURPOSE OF THE PROPOSED ACTION**

The purpose of the proposed action is to establish a functional arrangement of intermodal facilities in the ARV. Establishing intermodal facilities would promote economic development by creating new jobs, specifically higher wage jobs, improve transportation capacity and competitiveness necessary for attracting new businesses and industries to the area, and enhance modal transfer efficiency and interrelationships by providing more shipping capabilities and capacity.

This region is well suited for these objectives as it currently exhibits a strong regional manufacturing orientation, with a higher percentage of the workforce in manufacturing jobs than the national average, strong regional educational facilities (e.g. Arkansas Tech University and the University of Arkansas - Morrilton), favorable geographic location (on the approved 12-foot navigation channel of the MKARNS), and a history of public support for economic development.

Benefits of intermodal facilities may include reduced highway congestion, improved air quality due to fewer pollutants associated with trucks, fewer accidents, and lower fuel consumption (United States Department Of Transportation [USDOT], 1994). These would be achieved through connectivity with waterway and rail transportation and a subsequent reduction in reliance on the truck mode as the primary method of transportation.

Described in detail in subsequent sections are the benefits of the proposed intermodal facilities in the ARV, as they relate to the following aspects of the purpose:

- Economic development via new jobs and higher wages;
- Improved transportation capacity and competitiveness; and
- Efficient modal transfers.

### **2.3.1 Economic Development via New Jobs and Higher Wages**

Promoting economic development would include the growth of existing businesses and the establishment of new businesses in the ARV. The proposed intermodal facilities have benefits in terms of economic growth and development through transportation efficiencies (lower costs) and greater flexibility (multiple modes of transportation options at one location). Examples of the potential direct economic benefits may include increased jobs (keeping jobs in the United States and in the region), earnings, cargo handling proficiency, and manufacturing activities. Secondary economic benefits to the region would include transportation cost savings, inventory cost reduction, increased tax revenues, and the strengthening of economic connections within the ARV.

To help meet the purpose of this project, it is important the proposed intermodal facilities are located in an area within the ARV that is in proximity to existing communities that currently have a large enough population to provide a workforce for operating the facilities and for industries relocating operations within or near the site. Placement of the intermodal facilities near existing industry and other existing

---

infrastructure would help to maximize early and sustained usage of the facilities; thereby, providing immediate benefits to the region upon project completion.

### **2.3.2 Improved Transportation Capacity and Competitiveness**

The efficiency and competitiveness of different transportation systems is essential to economic growth and productivity (USDOT, 2004). The efficient movement of goods and products is vital to manufacturers and other businesses in the ARV, because freight transportation costs have a direct impact on the final price of a product at the marketplace and the resulting revenues. A viable freight transportation system is important in retaining existing industries and in recruiting new industrial activities.

Understanding future freight activity is important for matching infrastructure supply to demand and for assessing potential investment and operational strategies. To help decision-makers identify areas in need of capacity improvements, the USDOT developed the Freight Analysis Framework (FAF), a comprehensive national data and analysis tool, including county-to-county freight flows for the truck, rail, water, and air modes. The original FAF forecasted freight activity in 2010 and 2020 for each of the modes. A newer version of the FAF, known as FAF<sup>2.2</sup> superseded the original FAF. The newer version contains projected data for the year 2035 (FHWA, 2010).

The U.S. freight transportation network moves a staggering volume of goods each year. Over 15 billion tons of goods, worth over \$9 trillion, were moved in 1998. The movement of bulk goods, such as grains, coal, and ores, still comprises a large share of the tonnage moved on the U.S. freight network. However, lighter and more valuable goods, such as computers and office equipment, now make up an increasing proportion of what is moved. The data from FAF estimated that trucks carried about 71 percent of the total tonnage and 80 percent of the total value of U.S. shipments in 1998. Based on the original FAF, by 2020 the U.S. transportation system is expected to handle about 23 billion tons of cargo valued at nearly \$30 trillion (FHWA, 2007).

A freight analysis was conducted for the State of Arkansas by the FHWA Office of Freight Management and Operations using data from the newer FAF<sup>2.2</sup> (FHWA, 2007). The analysis looked at current and projected freight shipments to, from, and within Arkansas. The FAF integrates data from several sources to estimate commodity flows and related freight transportation activity among major metropolitan areas, states, regions, and international gateways (FHWA, 2007a). The following tables, Table 2.1 and Table 2.2 summarize the latest data available for the State of Arkansas. Additional information is available at [www.ops.fhwa.dot.gov/freight/freight\\_analysis/faf](http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf).

**Table 2.1. Freight Shipments To, From, and Within Arkansas: 1998, 2010 and 2020**

Arkansas	Tons (millions)			Value (billions \$)		
	1998	2010	2020	1998	2010	2020
State	224	335	428	151	307	512
By Mode						
Air	<1	<1	<1	6	17	34
Highway	163	253	331	133	268	445
Other <sup>1</sup>	<1	<1	<1	<1	<1	<1
Rail	48	62	72	10	18	28
Water	14	20	24	2	4	6
By Destination						
Domestic	218	323	410	142	283	465
International	7	12	18	10	24	47

<sup>1</sup> The "other" category includes international shipments via pipeline or by an unspecified mode.

Source: FHWA, 2007

**Table 2.2. Top Five Commodities Shipped To, From, and Within Arkansas by All Modes: 1998 and 2020**

Commodity	Tons (millions)		Commodity	Value (billions \$)	
	1998	2020		1998	2020
Lumber/Wood Products	33	69	Secondary Traffic	28	120
Farm Products	27	36	Food/ Kindred Products	25	93
Food/ Kindred Products	27	61	Chemicals/Allied Products	14	40
Secondary Traffic	27	78	Lumber/Wood Products	13	46
Nonmetallic Minerals	25	32	Transportation Equipment	10	21

Source: FHWA, 2007

### 2.3.2.1 Advantages of Trucks

The interstate highway system, the largest public works program in history, has had an enormous impact on the way business is done. Most of the national domestic freight is distributed by trucks. The U.S. DOT's FAF estimates that trucks carried 71 percent of the total tonnage of U.S. shipments in 1998. The State of Arkansas transports approximately 76 percent of its freight, in term of tonnage, by truck. Manufacturers and consumers like the convenience and door-to-door delivery of goods that truck transport provides. Direct deliveries by truck between manufacturer and retailer/consumer also can reduce manufacturer warehouse needs. The interstate system provides flexibility when it comes to moving freight by truck. Routes and pick-up and delivery times can be adjusted to the needs of the individual. In addition, trucks are suitable and more economical than other modes of transportation for short distances or small shipments.

The interstate highway system now serves all major cities, and in some instances, runs right through the downtown. In 2006, the interstate system covered approximately 47,000 miles. Trucks have the advantage of providing good and services easily to both

---

urban and rural areas. There is also an existing network of roadways used by a multitude of vehicles, and maintenance costs and repairs are split among States or may be financed by toll-roads.

The current interstate system also addresses the growing need for transportation corridors connecting the northern and southern border with the rest of the country. International trade from Canada and Mexico into the U.S. increased 47 percent between 1995 and 2005 (AHTD, 2007a). Arkansas is one example of a “bridge” state. The State contains I-40 which links the east coast and west coast while the combination of I-30 and I-55 links Canada and Mexico.

### **2.3.2.2 Advantages of Rail**

According to the Association of American Railroads, there are approximately 133 regional and 510 local railroads in the U.S., and railroads have been used as a primary mode of transport since the 1800’s. In Arkansas, there are approximately 2,750 miles of rail. Railroads can carry freight in areas where there are no waterways. Furthermore, railway can transport goods quickly, because they do not have to worry about traffic congestion or traffic volume, and the current rail system has ample carrying capacity to accommodate more freight movement.

Rail is an option when manufacturer’s need to transport heavy, bulky items over long distances. The carrying capacity of a train is large and can easily accommodate unexpected or larger loads by adding more cars. In addition, rail is a safe way to transport goods, because the cars protect the goods from sun, wind, rain, and snow.

### **2.3.2.3 Advantages of Water Transportation**

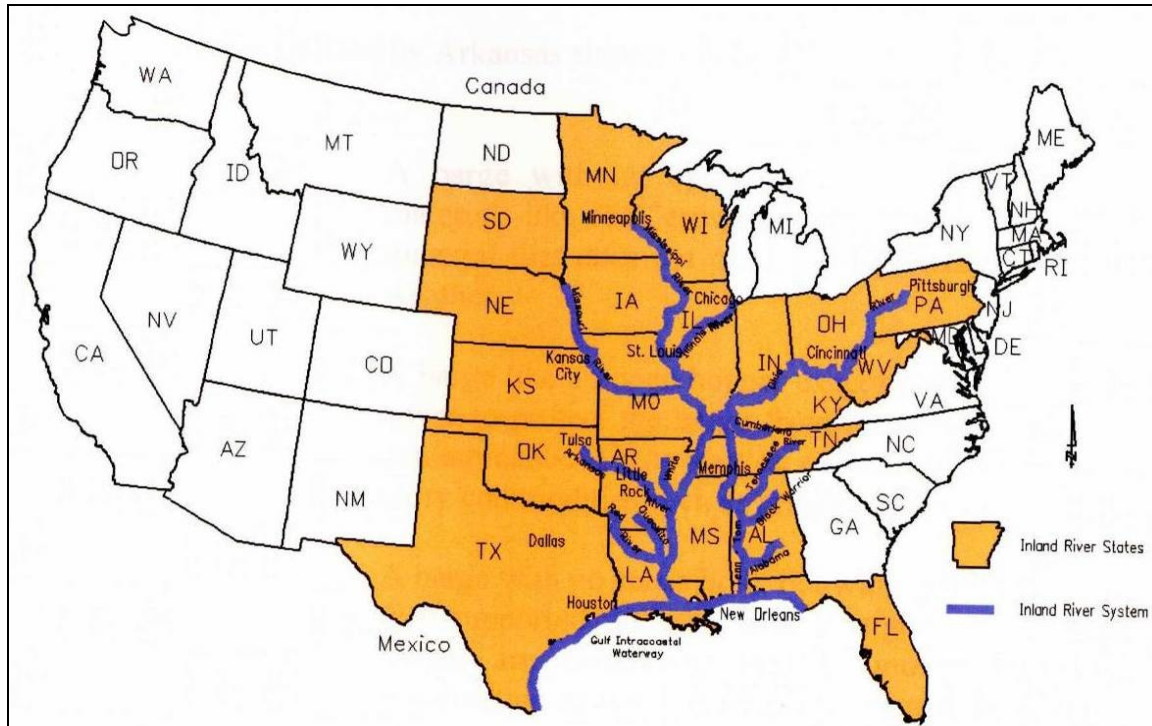
Water transportation offers greater opportunities for cost savings from lower fuel consumption and economies of scale (barges carry more cargo farther distances using less fuel than any other type of transportation). Water transportation also provides better environmental protection, because towboat haulage requires less fuel than truck or rail on a ton-mile basis resulting in less air pollution.

The RVIF project would include a slackwater harbor attached to the Arkansas River, an essential nexus of intermodal facilities to the inland waterway system. Several industry experts and port operators noted the increased ability and safety to transfer goods from water to land without incident, via a slackwater harbor. Furthermore, these individuals identified that the river within the study area is the only U.S. inland waterway system with potential for a 12-foot navigation channel, which adds to the benefits a slackwater harbor provides to the transportation capabilities of the region.

The nation’s inland navigable waterways provide a viable system for transporting bulk commodities within the U.S. and for accessing deep-water ports for overseas shipping. The ARV is linked to this system via the Arkansas River, which was recently approved to be converted from a 9-foot to a 12-foot navigation channel, pending funding availability. Figure 2.1 shows the location of the inland navigable waterways within the U.S. Additionally, Figure 2.2 shows the commercially navigable waterways and existing

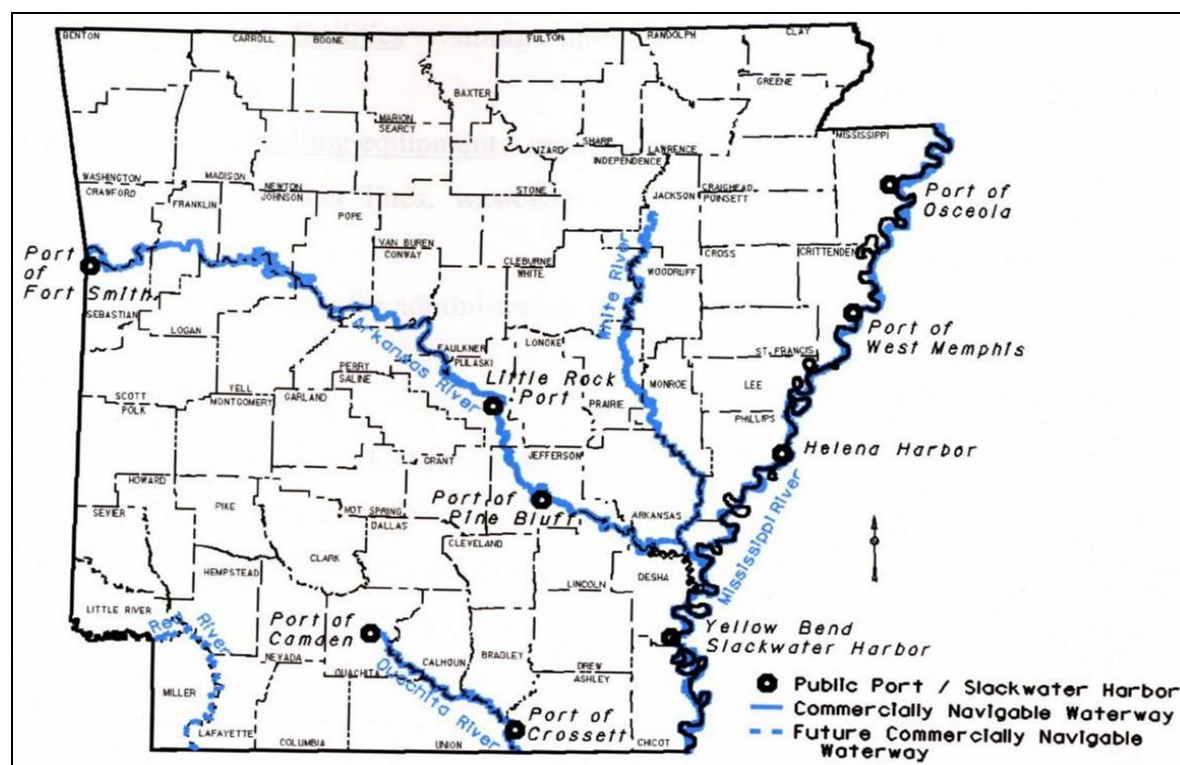
public ports in Arkansas. Cargo moved by the inland waterways system yields an average transportation savings of approximately \$11 per ton over the cost of shipping by alternative means, translating into an annual savings of over \$7 billion to the consumer (CARIA, 2007).

Figure 2.1. U.S. Inland River System



Source: AHTD 2005.

Figure 2.2. Arkansas Commercially Navigable Waterways, Public Ports and Harbors



Source: AHTD 2005.

### 2.3.2.4 Advantages of Intermodal Facilities

The strength of a transportation system lies in its diversity, with each mode having its own system-specific advantages. Highway carriers have the ability to provide door-to-door service; water carriers can handle bulk commodities safely and at very low costs; and rail carriers can transport a broad range of commodities over long distances. The public good is best served by the most efficient use of transportation options, regardless of mode.

#### Cargo Capacity

The standard capacities for the various freight units for truck, rail, and barge are provided in Table 2.3.

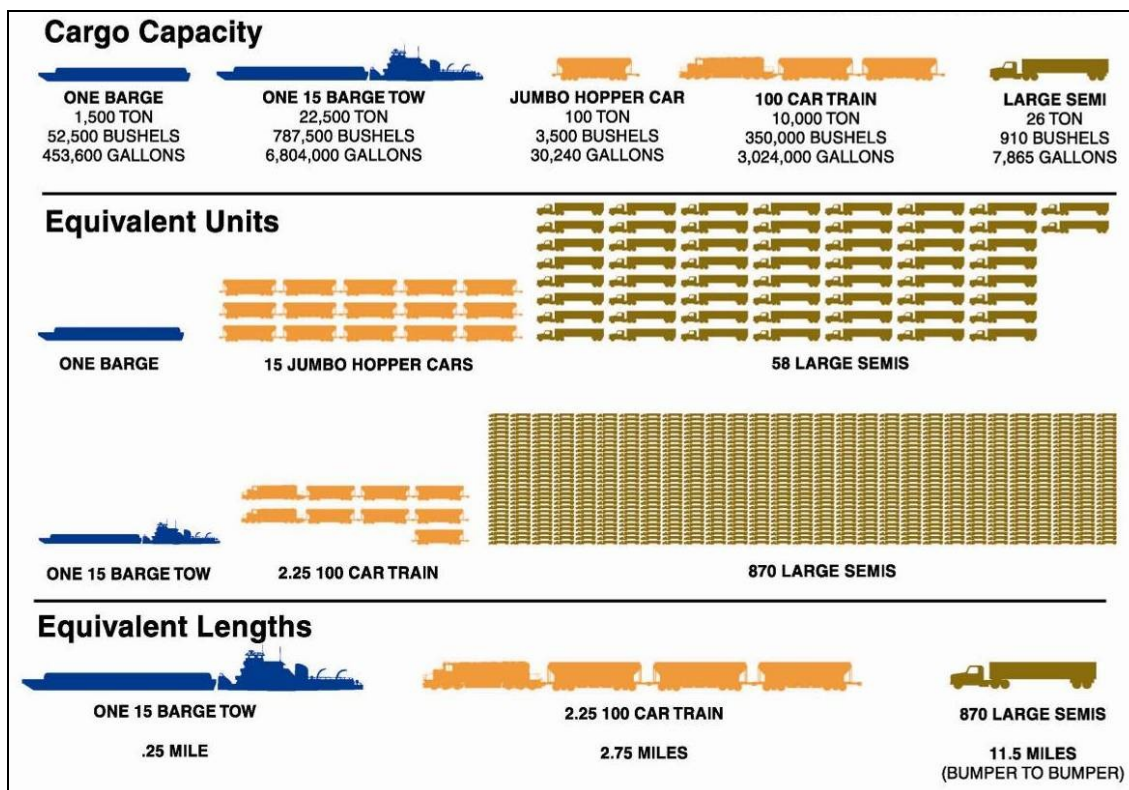
Table 2.3. Standard Modal Freight Unit Capacities	
Modal Freight Unit	Standard Cargo Capacity
Highway – Truck Trailer	25 Tons
Rail – Bulk Car	110 Tons
Barge – Dry Bulk	1,750 Tons
Barge – Liquid Bulk	27,500 Bushels (bbl)

Source: Center for Ports and Waterways Texas Transportation Institute, 2009.

Figure 2.3 depicts a comparison of cargo capacity, equivalent units, and equivalent lengths for barges versus trains and trucks.



Figure 2.3. Comparison of Cargo Capacity



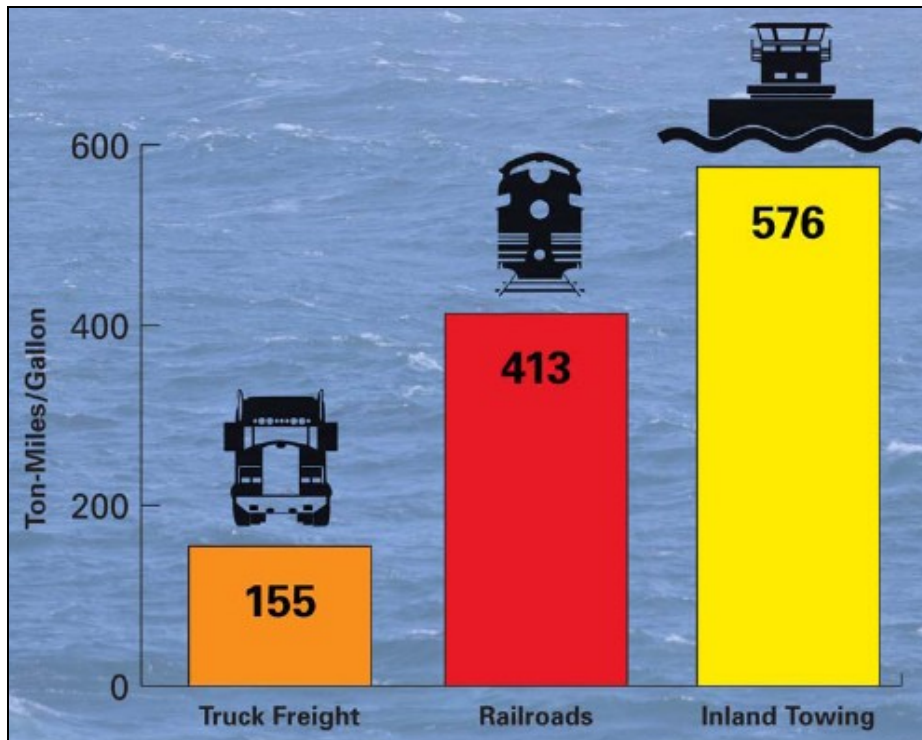
Source: IDOT, 2008.

Where barge transportation is available, rates of either truck or rail, particularly rail, tend to be lower. The corollary is that where barge transportation is not available, rail rates tend to be higher. Shippers are aware of this economic reality as they constantly compare transportation costs in an attempt to reduce operating expenses. Lower costs to the shipper translate into lower costs for the consumer (CARIA, 2007). Since many large industries consider proximity to a river port as a prime factor in their final location decision, intermodal facilities with a slackwater harbor would be an enhanced recruitment tool for the Authority.

### *Fuel Efficiency and Emissions*

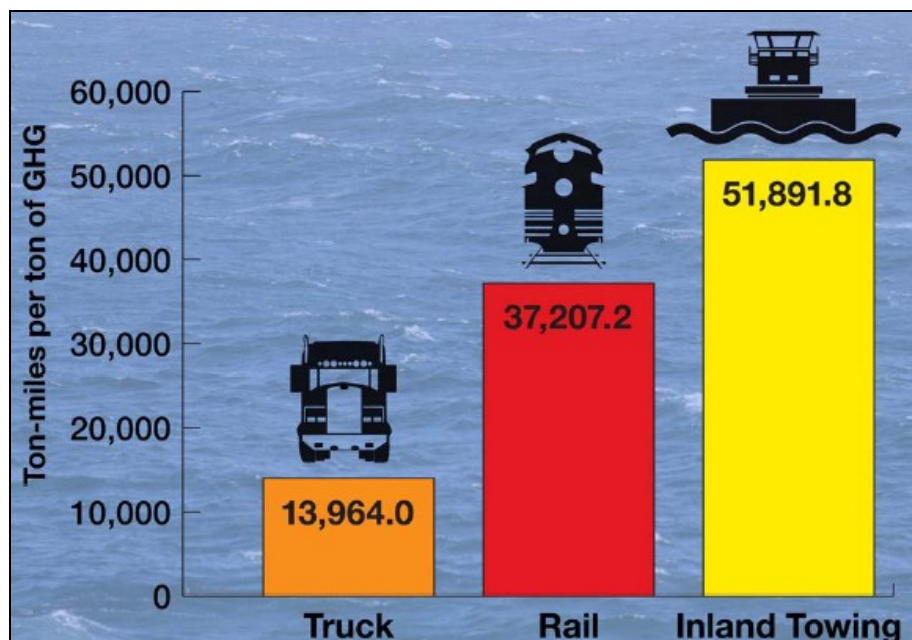
The fuel efficiency and emissions of rail, truck, and towing have different ranges as illustrated in Figure 2.4, Figure 2.5, and Table 2.4. The Arkansas Long Range Intermodal Transportation Plan documented that Air Quality Impacts is an emerging transportation issue that should be addressed as part of their long range transportation planning process. Intermodal facilities would help achieve this goal by minimizing the dependence on one mode of transportation. Manufacturer would be able to choose the form of transport that best helps them achieve their transport goals.

Figure 2.4. Comparison of Fuel Efficiency



Source: Center for Ports and Waterways Texas Transportation Institute, 2009.

Figure 2.5. Comparison of Emissions.



Source: Center for Ports and Waterways Texas Transportation Institute, 2009.

**Table 2.4. Summary of Emissions – Grams per Ton-Mile**

Mode	Emissions (grams/ton-mile)				
	HC	CO	NO <sub>x</sub>	PM	CO <sup>2</sup>
Truck	0.020	0.136	0.732	0.018	64.96
Eastern Rail	0.02419	0.06434	0.65312	0.01624	24.39
Western Rail	0.02423	0.06445	0.65423	0.01621	24.39
Inland Towing	0.01737	0.04621	0.46907	0.01164	17.48

Source: Center for Ports and Waterways Texas Transportation Institute, 2009.

## Safety

Although the main goals of this project are to promote economic development and job creation in the ARV region, any improvements to the safety and efficiency of the overall regional transportation system would be welcome benefits. Because shallow draft barges operate primarily in areas away from the general population; thus, are less exposed to urban areas than truck or rail, barge transportation is considered to be safer in terms of deaths or injuries to humans when compared with rail and truck transportation.

However, truck and rail are still vital to local, regional, and national economies and will continue to be the dominant modes of transportation used to ship freight where waterways do not reach. The USDOT, FHWA, and the Federal Railroad Administration (FRA) continually strive to monitor and improve safety conditions on highways and

railroads. The FRA Office of Safety promotes and regulates safety throughout the nation's railroad industry (FRA, 2007). Railroad safety information and statistics are available on the FRA website at <http://www.fra.dot.gov/us/content/66>. Railroads used by intermodal facilities would be operated according to FRA guidelines to ensure any increased rail traffic generated by the intermodal facilities in the ARV region would move through the area in a safe and efficient manner. Highway safety information and statistics are available on the FHWA website at <http://safety.fhwa.dot.gov/>.

The comparison of fatality and injury rates is shown in Table 2.5.

<b>Table 2.5. Fatality and Injury Statistics by Mode</b>					
<b>Mode</b>	<b>4-yr Avg Ton-Mile (millions)</b>	<b>4-yr Avg Fatalities (Operator)</b>	<b>4-yr Avg Fatalities (Other)</b>	<b>4-yr Avg Fatalities Total</b>	<b>4-yr Avg Injuries Total</b>
Truck	1,259,535	722	4,758	5,480	124,750
Rail	1,554,130	28	884	1,008	9,036
Inland Towing	287,680	1	7	8	13
<i>Source: Center for Ports and Waterways Texas Transportation Institute, 2009.</i>					

### *Environmental Factors*

Environmental safety may improve when materials are shipped via waterways, because truck and rail spills occur more often than barge spills (USDOT, 1994). Design features of barges, such as double hulls and navigational aids, help reduce the frequency of accidents. Furthermore, all new inland tank barges carrying liquid cargo now have an inner and outer hull.

<b>Table 2.6. Comparison of Large Spills Across Modes</b>						
<b>Mode</b>	<b>Totals</b>		<b>4-yr Avg (2001-2004)</b>			
	<b># of Spills</b>	<b>Amount of Spill (Gallons)</b>	<b># of Spills</b>	<b>Amount of Spill (Gallons)</b>	<b>Percent Haz-Mat (%)</b>	<b>Haz-Mat Ton-Miles (millions)</b>
Truck	643	2,698,490	161	674,622	8.84	111,404
Rail	115	1,147,105	29	286,776	4.18	74,341
Inland Towing	25	470,579	6	117,645	11.36	32,668
<i>Source: Center for Ports and Waterways Texas Transportation Institute, 2009.</i>						

The environmental risks associated with highway and rail transportation may be higher than water transportation, as these systems tend to require the transportation of hazardous materials closer to populated areas. Where comparable, water transportation has an environmental cost impact of one-fifth that of rail and one-tenth that of truck (MNDOT, 1997). Environmental costs used for those comparisons include costs associated with fuel consumption, emissions, tire disposal, and roadway wear.

---

Based on this information, it is apparent that projects that promote the use of water transportation can provide several benefits both economically and environmentally.

### **2.3.3 Efficient Modal Transfers**

The primary function of public ports is to act as a center for intermodal transportation and product distribution (AHTD, 2005). The ARV's economic prosperity and ability to compete domestically and globally depend on an efficient interconnected transportation system. Interconnecting all modes of transportation provides options to allow freight to be moved through a region in the safest, most efficient, and cost-effective (monetary and environmental) manner possible. Interconnectivity of the modes of transportation at the intermodal facilities would also provide overall safety and efficiency in the transportation system.

## **2.4 NEED FOR THE PROPOSED ACTION**

### **2.4.1 Determining the Need**

In determining the need for this project, several key trends and factors were taken into consideration, including those presented in a study for improving freight transportation in Arkansas (AHTD, 2002a), as well as those gathered from interviews in January 2010 with industry experts, port operators, and economic development professionals in the port industry (Personal Communications, 2010).

#### **2.4.1.1 Study to Improve Freight Transportation in Arkansas**

As mentioned above, the study to improve freight transportation in Arkansas was conducted by AHTD in conjunction with FHWA, and was a coordinated effort between other members of a Freight Transportation Working Group comprised of Federal, State, and local agencies, regional planning agencies and organizations, and academic institutions (AHTD, 2002a). The Freight Transportation Working Group determined that the trends and factors influencing the way products were handled and shipped in Arkansas included:

- International trade and increased domestic competition that forced various Arkansas manufacturers to change from the practice of distributing inventory to relying on freight carriers and freight forwarders for inventory management and control;
- Use of warehouses as product assembly points, including activities such as adding parts to semi-finished goods, sorting, wrapping and repackaging, and direct product mailing;
- Increases in e-commerce activities (wholesale and retail) and a resulting increased demand on the trucking industry to improve response times;
- Increased use of containers for both domestic and international shipments;
- Increased use of outsourcing to third parties for special product handling; and

- 
- Increased tendency for industries to seek sites where infrastructure is in place rather than build and maintain their own rail yards, terminals, warehouses, and other support facilities.

#### **2.4.1.2 Industry Experts, Port Operators, and Economic Development Professional Interviews**

Eight individuals were contacted between January 4, 2010 and January 11, 2010 (Personal Communications, 2010). In an effort to broaden the spectrum of the RVIF project, individuals included those with a local, regional, and national perspective of ports and intermodal facilities. The individuals included representatives from the following agencies and businesses: Arkansas Economic Development Commission, Arkansas River Valley Alliance for Economic Development, Little Rock Port Authority, Arkansas Waterways Commission, AHTD, Logistics Services, Inc., Economic Alliance Houston Port Region, and UPRR. The trends and factors gathered from these conversations resulted in several general suggestions or comments about intermodal facilities and are presented throughout this document. However, according to these individuals, location and infrastructure of a port are the essential factors to a port's overall success.

#### **2.4.2 Need for the RVIF**

The RVIF is supported by local, statewide, and nationwide land use, economic, and growth objectives. Within these objectives, specific needs for the RVIF have been identified. They include the need:

- For more slackwater harbors in the State of Arkansas;
- For an integrated regional economy;
- To promote social and economic growth by creating higher wage jobs in the ARV region;
- For larger industrial sites with access to multimodal transportation; and
- For additional freight capacity through large-scale freight projects.

The following is a detailed discussion of each of these needs.

##### **2.4.2.1 Need for More Slackwater Harbors in the State of Arkansas**

A severely limiting factor in the economic development of Arkansas' water transportation facilities is the lack of slackwater harbors throughout the State, and not necessarily the lack of ports or water access.

In conversations with port operators and port industry experts, slackwater harbors present a definite advantage in the way cargo is managed. A slackwater harbor allows barges to load and unload away from the main channel of the river, eliminating the need for interference from river levels. Additionally, these experts indicated the benefits of the approved 12-foot channel of the MKARNS would provide to the users of a slackwater harbor. For instance, the experts agreed, commercial navigation on the river

---

will be more efficient and industries now have the ability to transport products in larger quantities. The increased channel depth also makes the MKARNS the only waterway in the central U.S. inland waterway system that has greater than a 9-foot channel depth. The slackwater harbor proposed for the RVIF and the approved 12-foot channel are complementary in their ability to fill a need for more slackwater harbors in the State of Arkansas.

Previous studies conducted in Arkansas indicated more slackwater harbors are needed to provide more barge shipping capabilities and promote better use of the MKARNS to ship goods to and from the state. These studies also identified various problems with the existing private and public ports in Arkansas, including several on the MKARNS. Problems consisted of a lack of slackwater harbors, inadequate intermodal capabilities, deteriorated conditions of infrastructure and equipment, and developmental issues, such as poor landside access for road and rail. Poor landside access to river ports results in freight delivery delays, higher costs to shippers, and impedes industrial recruiting efforts (AHTD, 2002). The RVIF, with its associated slackwater harbor, would address these problems by promoting better use of the MKARNS, offering optimal landside access, and providing new infrastructure and equipment with intermodal capabilities.

Concerns have been raised that construction of the RVIF could result in negative impacts in terms of competition with existing ports along the MKARNS; however, it can also be argued that increasing the capabilities and capacity of barge shipments on the MKARNS provided by the RVIF could also benefit other existing ports. Since it is more economical for barges to carry freight rather than being empty or partially loaded, it is anticipated that the RVIF would help promote more use of existing ports along the MKARNS. Barges traveling to and from the RVIF could readily stop at existing ports en route to deliver or pick up freight. The more barges that are traversing the river, the more potential there is for users to take advantage of their shipping services. There is also the potential that tenants of the RVIF could use the MKARNS as a convenient way to deliver products to other cities or regions within the state via existing ports. For instance, it is possible an industry based at the RVIF may require products from other areas along the MKARNS to be delivered to their local facilities. If such products could be both more easily and efficiently moved by barge, then provision of the RVIF could help integrate not only the ARV regional economy, but the state's economy as well. Thus, attracting more businesses or industries to the area would potentially foster business for adjacent ports.

Potential existing industry users of the RVIF in the region and in the state include producers of food products; fabricated metals; forest products; chemicals and fertilizers; agricultural products, including grain and animal feed; sand, gravel, and rock products; iron and steel; and petroleum. Many of these industries utilize the existing ports and would be expected to do so in the future. The RVIF would also support additional or expanded use of the MKARNS by those industries where the need for additional services may occur.



---

The Little Rock Port Authority is an example of a successful intermodal facilities complex with a slackwater harbor that is established along the MKARNS. It provides a 2,550-acre heavy industrial park connected to two full-service river terminals and a switching railroad. These full-service public terminals offer all industry in the Port and adjacent sites the opportunity to ship by barge. The terminals are equipped to handle almost any product, therefore allowing a cost-effective, efficient mode of transportation.

The Little Rock Port Authority Fred I. Brown Slackwater Harbor is an important attribute of the port. This safe harbor allows barges to get off the main current of the river into the zero current of the harbor for loading and offloading. The harbor is surrounded by developed land ready for occupancy by heavy industrial users. The Port has received more than \$350 million in investment from new plant locations and expansions within the last three years.

#### **2.4.2.2 Need for an Integrated Regional Economy**

Regional advantages would be provided by the intermodal facilities by making available additional capacity to meet the infrastructure and location requirements of businesses seeking to relocate and maximize their transportation and shipping efficiencies.

The ARV region has a strong manufacturing orientation, high quality educational facilities, and a favorable geographic location; however, the ARV region does not have an integrated economy. The ARV is also not equipped to provide the range of transportation and shipping choices, infrastructure, and support facilities to attract businesses needing such services. Specifically, the region lacks the ability to offer business enterprises transportation and shipping choices and flexible transshipment facilities, combining various transportation modes while promoting cost efficiencies.

The RVIF would help integrate the regional economy by offering a large industrial site capable of supporting several large industries, along with providing flexible freight handling, storage, and shipping facilities with direct access to three modes of transportation. Providing the intermodal facilities and associated industrial land and infrastructure would attract new business enterprises to the area, and help support existing industries in the region by offering better shipping options and freight handling capability than is currently available. Furthermore, in conversations with port experts, the regional area of influence for a port averages 100 miles, suggesting an impact on the integrated regional economy far greater versus a single modal improvement (*i.e.* roadway interchanges, rail switching services, etc.).

In conversation with several port operators and industry experts associated with the MKARNS, existing business enterprises in the region that would benefit from the RVIF include food products, fabricated metals, and forest products. The new businesses would include these and other typical bulk commodities shipped via the inland river system and the national rail system including sand, gravel and rock; iron and steel; petroleum products; farm products/commodities, such as chemical fertilizers and feed; and agricultural crops, such as wheat, rice, and soybeans. New business enterprises provide jobs and help spur economic growth in the region through direct and secondary



---

effects. Secondary benefits of attracting new businesses to the area include increased real estate sales, retail sales, personal services, and overall tax revenues.

Furthermore, the RVIF would specifically provide fleet services, stevedoring activities, a foreign trade zone, warehousing and storage capabilities, and distribution services with access to water, rail, and/or highways. Examples of commercial and financial activities directly involved in economic integration brought about by these activities include the following:

- Fleet Services:
  - Towboat Services;
  - Fleet Assembly/Disassembly;
  - Fleeting Supplies;
  - Wharfage and Fees; and
  - Wharfage Demurrage.
- Stevedoring Activities:
  - Loading/Unloading;
  - Shipping/Handling;
  - Packaging;
  - Inventory Control; and
  - Special Handling.
- Foreign Trade Zone
- Warehousing/Storage and Distribution Services:
  - Indoor (Refrigerated/Non-Refrigerated);
  - Outdoor; and
  - Combined indoor/outdoor.
- Single-Mode Transportation Services (waterway, rail, motor vehicle)
- Intermodal Transfers and Other Services:
  - Barge and rail;
  - Barge and truck;
  - Rail and truck; and
  - Crane Services.

#### **2.4.2.3 Need to Promote Social and Economic Growth by Creating Higher Wage Jobs**

Investments that improve access, reliability, and intermodal connectivity have a positive economic impact on a region. Such investments reduce the cost of production, promote output and productivity growth, increase an area's ability to compete, and enhance the standard of living (USDOT, 1996). According to AHTD multimodal officials, the Arkansas State Public Riverport Study and Needs Assessment (2005), indicates the

---

direct economic value of Arkansas' public ports and harbors is approximately \$58 million dollars annually, and benefits employment and other activities, such as sales tax generated and the value of goods produced.

Data presented in Table 2.10 of the SDEIS suggest that the wages in the ARV are below statewide averages. One way to help improve this wage issue is to attract additional large industries and businesses to the region. By attracting larger businesses and industries to the region it is expected that additional higher wage jobs would become available. Higher wage jobs would spur additional spending in both local and regional economies benefiting the entire region economically. Additionally, in conversation with industry experts in other states, the economic growth created by higher wage jobs will also improve the overall quality of life for the region.

A comprehensive review of the demographic trends for the ARV region supports the need to create higher wage jobs that would promote social and economic growth. The following outlines the population, employment, average weekly earnings, and unemployment trends for the six-county region that comprises the RVIF project area.

## **RVIF Region – Demographic Trend Analysis**

### *Population*

From 1990 to 2010, total population in the six-county region increased by approximately 34,000, a population growth rate of nearly 26 percent for the period (USDOC 1990, 2000, and 2010). Population change in the ARV is addressed in Table 2.7. Johnson County recorded the largest percent increase (40.2%) from 1990. Clarksville, the county seat for Johnson, had a population increase of approximately 57 percent, as addressed in Table 2.8. The largest and most urbanized county in the ARV, Pope County, had the second largest increase of approximately 35 percent followed closely by the least populated county, Perry. Perry had an increase from 1990 to 2010 of approximately 31 percent with the county seat, Perryville, increasing at a rate of 28 percent.

The population of the ARV region grew at a faster rate (approximately 19%) from 1990 to 2000 than the State (approximately 14%), an indication of considerable economic potential. Four of the six counties in the ARV (Johnson, Perry, Pope, and Yell) ranked in the top 25 of 75 Arkansas counties in terms of population increase between 1990 and 2000. Of those four, Johnson and Perry Counties ranked in the top ten (IEA, 2009).

**Table 2.7. Arkansas River Valley: Population and Percent Change for Six County Region and State, 1990-2008**

Area	1990 Population	2000 Population	2010 Population	1990-2010 Percent Change
Six County Region	129,540	153,571	163,550	26.3
Conway County	19,151	20,336	21,273	11.1
Johnson County	18,221	22,781	25,540	40.2
Logan County	20,557	22,486	22,353	8.7
Perry County	7,969	10,209	10,445	31.1
Pope County	45,883	54,469	61,754	34.6
Yell County	17,759	21,139	22,185	24.9
State of Arkansas	2,350,725	2,673,400	2,915,918	24.0

*Source: U.S. Census Bureau, Census of Population and Housing, 1990, 2000, and 2010.*

**Table 2.8. Arkansas River Valley: Population and Percent Change for Most Populated Place in Each County, 1990-2008**

Most Populated Place	1990 Population	2000 Population	2010 Population	1990-2010 Percent Change
Morrilton (Conway County)	6,551	6,550	6,767	3.3
Clarksville (Johnson County)	5,833	7,719	9,178	57.3
Booneville (Logan County)	3,804	4,117	3,990	4.9
Perryville (Perry County)	1,141	1,458	1,460	28.0
Russellville (Pope County)	21,260	23,682	27,920	31.3
Dardanelle (Yell County)	3,722	4,228	4,745	27.5

*Source: U.S. Census Bureau, Census of Population and Housing, 1990, 2000; and 2010.*

### *Employment*

The total labor force in the ARV in 2010 was 74,565, which equates to approximately 7 percent growth from the year 2000. Labor force and employment issues in the ARV are addressed in Table 2.9. Pope County accounted for nearly 40 percent of the regional labor force total. Perry County recorded the smallest labor force population, which would be expected considering that it is also the smallest in terms of total population.

Total employment in the six-county region in 2010 was 69,314, of which 14,653 were in the manufacturing sector, accounting for approximately 21 percent of the total labor force. Yell and Johnson Counties reported approximately 27 percent and 31 percent respectively of their labor force to be employed in manufacturing, which is likely a reflection of a concentration of poultry processing facilities in those areas.

Providing facilities capable of attracting large industries to the area could play a key role in ensuring enough jobs are created to keep up with growth. In 2010, the manufacturing sector represented 21 percent of the total employment in the six-county region. That ratio can be compared to about almost eleven percent for the U.S. (USBLS, 2008) and 15 percent for the State (USCB 2006-2010).

**Table 2.9. Arkansas River Valley: Employment Measures, 2010**

County	Civilian Labor Force	Total Employment	Manufacturing Sector (Number Employed)	Manufacturing Sector (Percent Employed)
Six County Region	74,565	69,314	14,653	21.1
Conway County	9,042	8,453	1,582	18.7
Johnson County	11,256	10,385	3,197	30.8
Logan County	9,865	9,044	1,816	20.1
Perry County	4,484	4,217	814	19.3
Pope County	29,856	27,880	4,732	17.0
Yell County	10,062	9,335	2,512	26.9
State of Arkansas	1,360,938	1,254,140	187,690	15.0
<i>Source: U.S. Census Bureau, Census of Population and Housing, 1990 and 2000; American Community Survey, 2006-2010.</i>				

### *Average Weekly Earnings*

A comparison of the ARV counties to the State, in terms of average weekly earnings and as a percent of the State average, is provided in Table 2.10. None of the average weekly earnings in any of the counties equals or exceeds the State average of \$804. Pope County, with 79 percent of the State average is the closest. Yell County reports the lowest average with respect to the State at 63 percent. The ARV six-county average weekly earnings of \$558 are only 69 percent of the State average. This indicates a wage depression that constitutes a regional, rather than individual county economic weakness, and that wage depression needs to be addressed systematically as a region.

**Table 2.10. Arkansas River Valley: Average Weekly Earnings, 2010**

County	Average Earnings	Percent of State Earnings
Six County Region	\$558.47	69.4
Conway County	\$566.67	70.4
Johnson County	\$573.67	71.3
Logan County	\$545.50	67.8
Perry County	\$520.67	64.7
Pope County	\$637.00	79.2
Yell County	\$507.33	63.1
State of Arkansas	\$804.25	100.0
<i>Source: ADWS, 2010 Civilian Labor Force Data</i>		

### *Unemployment*

As of 2011, unemployment rates in all counties of the ARV (see Table 2.11) were close to, or below, the State average of approximately eight percent. As a region, the ARV average is just below eight percent (7.8%), as reported in 2011 by the Arkansas Department Workforce Services (ADWS). Although Table 2.5 shows that the ARV region is similar in unemployment to the State, on average those jobs are paying approximately 31 percent less than the State weekly average. Consequently, even though the area's employment outlook is relatively positive, the low wages earned in those jobs do not promote economic growth or improve average incomes for families in the ARV. Development of the intermodal facilities would directly improve this situation through promoting access to higher wage jobs and increasing the region's competitiveness and transportation connectivity.

**Table 2.11. Arkansas River Valley: Annual Unemployment, 2011 (Not Seasonally Adjusted)**

County	Number Unemployed	Unemployment Rate
Six County Region	5,950	7.8
Conway County	850	8.4
Johnson County	850	7.2
Logan County	825	8.4
Perry County	425	8.6
Pope County	2,325	7.6
Yell County	675	6.5
State of Arkansas	109,975	8.0
<i>Source: ADWS: Local Area Profile, 2011</i>		

---

#### **2.4.2.4 Need for Large Industrial Sites with Access to Multimodal Transportation**

Currently, there are few industrial sites in the region capable of supporting large industries that may wish to do business in the area (i.e., industrial sites with 100 acres or more). According to economic development professionals familiar with the RVIF project, several large businesses have already chosen not to develop new facilities in the area due to a lack of appropriately sized industrial sites and existing infrastructure, especially those with ready access to two or more modes of transportation (Personal Communications, 2010). Appropriate access to the various modes of transportation is known to be a catalyst for defining a large industrial site. For example, Little Rock Port officials predict that a new access road constructed approximately three years ago at the Little Rock Port is projected to serve as a means for future expansion at this port.

Future industrial growth in the ARV is limited by the lack of suitable industrial sites, according to a conversation with the Arkansas Valley Alliance for Economic Development. The Alliance owns three industrial sites in the East End Industrial Park in Russellville; however, these sites have less than 45 acres of developable land. In 2006-2007, the ARV was omitted from consideration for several industrial prospects, because each prospect required greater than 100 acres. Each of these industrial prospects would have required rail and truck access and one would have required rail, truck, and port access. This demonstrates a clear need for suitable industrial sites with intermodal connectivity in the ARV.

Previous studies indicate that some large industries consider proximity to river ports a prime factor in location decisions. Per the Arkansas Valley Alliance for Economic Development, one potential business that looked into locating in the ARV required a site with adequate on-site highway, rail, and water access and was therefore forced to look somewhere other than the ARV. This is because there are no existing ports in the region that provide direct access to water, rail, and highways and that have adequate land adjacent to them for industrial development.

In some rural sections of the country, taking advantage of water transportation opportunities has played a major role in generating economic activity, employment, and income (USDOT, 1994). Other regions of the country have shown economic benefits through freight-related intermodal investments that increased that region's competitive position by lowering the costs of doing business in that area (ARC, 2004). Overall, intermodal transportation investments can increase the volume of transportation in an existing transportation network, reduce logistics costs of current operations, influence the economies of scale associated with transportation network expansion, and provide better accessibility to input and output markets (Yevdokimov, 2000).

#### **2.4.2.5 Need for Additional Freight Capacity**

Motivations for large-scale freight projects include reduced congestions on roadways and subsequent enhanced safety; expanded system capacity; improved system

---

performance; enhanced market access; realized logistics efficiencies; and environmental improvements (USDOT, 2006).

According to the USDOT (USDOT, 2006), international trade has grown rapidly over the past 20 years and is projected to increase dramatically by 2020, challenging the capacity of our nation's transportation system to accommodate growing freight volumes. This is partly due to the North American Free Trade Agreement (NAFTA) and the resulting continuation of growth in foreign trade, which has resulted in record freight volumes each year. This trend continues to contribute to congestion on our transportation system through increased truck traffic on our interstates. The increased freight load has also taxed U.S. rail systems, as well as led to insufficient returns on rail capital investments, limiting the ability of the industry to increase rail capacity. When combined, these trends show a negative forecast for the state of the U.S. freight system, especially when combined with the USDOT estimate of a projected 57 percent increase in U.S. domestic freight tonnage between the years 2000 and 2020. Thus, the need for additional freight capacity is evident at the national level, which translates to the need to the local level – the RVIF – as well.

The freight goods data collected in 1999 by the AHTD established that total inbound freight to the ARV region amounted to 2.07 million tons, and the total outbound movement was 3.29 million tons. Truck shipments accounted for approximately 56 percent of the inbound freight; rail shipments made up 39 percent of that total; and about four percent were shipped by water. The outbound freight movements were divided as follows: 78 percent via truck, 13 percent by rail, and the remaining 9 percent was shipped by water (AHTD, 2005). The proposed intermodal facilities would provide improved and expanded transportation opportunities, capacity, and competitiveness in the region that would allow multiple transportation modes increased opportunities for increased integration into the national and international transportation networks.

Although the RVIF is a regional transportation project aimed at promoting economic growth in the ARV, by providing facilities to help better utilize the inland water and rail shipping options and therefore potentially reducing the number of trucks coming to and from the ARV, there would be at least some impact to the overall national freight capacity. The impact may not be measurable when viewed at the project level, but when viewed cumulatively with other transportation improvement projects the RVIF could help play a role in helping to increase the overall national freight capacity. Any project that improves access, reliability, and intermodal connectivity has potential for positive economic impacts extending from the local to the national economies.

It is critical the USDOT ensures sound investments are made in large-scale freight projects (USDOT, 2006). During a period from 1950 to 1989, the USDOT estimated that industries realized production cost savings averaging 18 cents annually for every dollar invested in the road system (USDOT, 1996). In addition, it is estimated that for every dollar spent on improving the navigation infrastructure, the U.S. Gross Domestic Product increases by more than three dollars (CARIA, 2007). This highlights the

---

positive role investments in the overall transportation system can have in fostering economic growth and business location and expansion decisions.

Advantages of projects that increase freight capacity include: reduced cost of production due to transportation savings resulting in increased productivity and sales; increased ability for local and regional economies to compete with surrounding areas; and increased standard of living in areas where such improvements are made.

#### **2.4.3 Summary of Needs for RVIF**

The national need for additional freight capacity developed through large-scale freight projects, the lack of intermodal facilities and shipping choices in the ARV, the need for slackwater harbors in Arkansas, especially in the ARV, and the need for additional industrial sites in the ARV coupled with the depressed wages in the ARV demonstrate a definitive need for the RVIF. Furthermore, the intermodal facilities will enhance business productivity, economic development, and business location and expansion decisions in the ARV.

### **2.5 BENEFITS OF THE PROPOSED ACTION**

Through minimizing the costs of doing business, the combined direct and indirect benefits of implementing the intermodal facilities would make the region much more competitive in the national and global economies. The regional (six-county) economy would be improved through industrial capacity building, providing wider employment opportunities for the regional labor force, increased wages, and increased supplier effects and individual consumption activities.

Direct benefits would include additional employment and associated wages, as well as corporate profitability associated with increased commercial activities, specialization shipping services, more competitive warehousing, cold storage facilities, packaging, cross-matched products and by-products, and transportation cost efficiencies. These direct benefits of the RVIF not only impact the existing regional industry, but would attract new businesses into the area as well.

Indirect, spillover effects include the establishment of new markets, attraction of new business establishments, diversification of the work force, and various economic multiplier effects that would spread through the entire regional economy. Sectors of the economy that would be affected by these indirect benefits include real estate, personal services, and regional retail activities.